IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

FUNDAMENTAL INNOVATION SYSTEMS INTERNATIONAL LLC,

Plaintiff,

v.

ZTE CORPORATION, ZTE (USA), INC. and ZTE (TX), INC.,

Defendants.

Case No. 3:17-cv-01827-N

JURY TRIAL DEMANDED

PLAINTIFF'S MOTION FOR PARTIAL SUMMARY JUDGMENT

TABLE OF CONTENTS

Page

I. INTRODUCTION 4

II. UNDISPUTED MATERIAL FACTS 5

A. ZTE's Contentions in this Action 5

B. ZTE's IPR Petitions 6

III. LEGAL STANDARD 7

A. Summary Judgment 7

B. IPR Estoppel Under 35 U.S.C. § 315(e)(2) 7

C. Invalidity Based On Obviousness 8

IV. ARGUMENT 9

A. Fundamental Is Entitled to Summary Judgment of Validity of the Asserted Claims of the '550 Patent Based on IPR Estoppel 9

B. Fundamental Is Entitled to Summary Judgment That the Asserted Claims of the '111 and '766 Patents Are Not Obvious Based on the Proposed Combination of Theobald and Shiga 16

V. CONCLUSION 27

TABLE OF AUTHORITIES

Cases

Anderson v. Liberty Lobby, Inc.,
477 U.S. 242 (1986)..... 4

Apotex v. Wyeth,
IPR2015–00873, Paper No. 8 8

ATD Corp. v. Lydall, Inc.,
159 F.3d 534 (Fed. Cir. 1998) 5

Bausch & Lomb, Inc. v. BarnesHind/Hydrocurve, Inc.,
796 F.2d 443(Fed. Cir. 1986) 5

Biscotti Inc. v. Microsoft Corp.,
No. 2:13-cv-1015, 2017 WL 2526231 (E.D. Tex. May 11, 2017) 8

Celotex Corp. v. Catrett,
477 U.S. 317 (1986)..... 4

Cheese Sys., Inc. v. Tetra Pak Cheese & Powder Sys., Inc.,
725 F.3d 1341 (Fed. Cir. 2013) 5, 24

Cobalt Boats, LLC v. Sea Ray Boats, Inc.,
No. 2-15-cv-21, 2017 WL 2605977 (E.D. Va. June 5, 2017)..... 8, 10, 13

F'Real Foods, LLC v. Hamilton Beach Brands, Inc.,
No. 16-41-CFC, 2019 WL 1558486 (D. Del. Apr. 10, 2019)..... 10, 11

Fields v. City of S. Houston,
922 F.2d 1183 (5th Cir. 1991) 4

Great W. Cas. Co. v. Intellectual Ventures II LLC,
IPR No. 2016–01534, Paper No. 13, 2017 WL 11139840 (PTAB Feb. 15, 2017) 12

Harmonic Inc. v. Avid Tech., Inc.,
815 F.3d 1356 (Fed. Cir. 2016) 6, 24

iLife Techs., Inc. v. Nintendo of Am., Inc.,
No. 3:13-cv-4987-M, 2017 U.S. Dist. LEXIS 87769 (N.D. Tex. May 30, 2017)..... 8

KSR Int'l Co. v. Teleflex Inc.,
550 U.S. 398, 415 (2007)..... 6

MediaTek, Inc. v. Freescale Semiconductor, Inc.,
No. 11-CV-5341 YGR, 2014 WL 2854705 (N.D. Cal. June 20, 2014) 6

MCM Portfolio LLC v. Hewlett-Packard Co.,
812 F.3d 1284 (Fed. Cir. 2015) 11

Milwaukee Elec. Tool Corp. v. Snap–On Inc.,
271 F. Supp. 3d 990 (E.D. Wis. 2017)..... 11, 12

Network-1 Techs., Inc. v. Alcatel-Lucent USA, Inc.,
No. 6:11-cv-492, 2017 WL 4856473 (E.D. Tex. Oct. 27, 2017) 8

Nike, Inc. v. Adidas AG,
812 F.3d 1326 (Fed. Cir. 2016),
overruled on other grounds, *Aqua Prods., Inc. v. Matal*,
872 F.3d 1290 (Fed. Cir. 2017) 21

Oil–Dri Corp. of Am. v. Nestle Purina Petcare Co.,
No. 15-cv-1067, 2017 WL 3278915 (N.D. Ill. Aug. 2, 2017) 10

Parallel Networks Licensing, LLC v. Int'l Bus. Mach. Corp.,
No. 13–2072, 2017 WL 1045912 (D. Del. Feb. 22, 2017) 8, 13

SAS Inst., Inc. v. Iancu,
138 S. Ct. 1348 (2018) 5, 7, 10

Shaw Indus. Group, Inc. v. Automated Creel Sys., Inc.,
817 F.3d 1293 (Fed. Cir. 2016) 9, 10, 11

St. Jude Med., Inc. v. Access Closure, Inc.,
729 F.3d 1369 (Fed. Cir. 2013) 5, 24

Trustees of Columbia Univ. in the City of N.Y. v. Symantec Corp.,
No. 3:13-cv-808, 2019 WL 2814682 (E.D. Va. Jul. 2, 2019) 5, 8, 10, 11, 12

Zitovault v. Int'l Bus. Mach. Corp.,
No. 3:16-cv-962, 2018 WL 2971178 (N.D. Tex. Apr. 4, 2018) 7

Rules / Statutes

35 U.S.C. § 103(a) 5

35 U.S.C. § 282 5

35 U.S.C. § 315(e)(2) ..... *passim*

35 U.S.C. § 318(a) 3, 4, 7

Fed. R. Civ. P. 56(a) 4

Legislative Materials

157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011) 8

Patent Reform Act of 2009: Hearing Before the House Comm. on the Judiciary,
111th Cong. 153 (2009) (statement of Rep. Manzullo) 11

Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. on the Judiciary,
110th Cong. 13 (2007) (statement of Jon Dudas, Director, USPTO) 12

I. INTRODUCTION

Plaintiff Fundamental Innovation Systems International LLC ("Fundamental") respectfully moves for partial summary judgment of no invalidity of U.S. Patent Nos. 8,624,550 ("the '550 Patent"), 7,239,111 ("the '111 Patent"), and 8,232,766 ("the '766 Patent")[1] on the grounds that: (1) ZTE is estopped from challenging the validity of the '550 Patent based on IPR estoppel under 35 U.S.C. § 315(e)(2), and (2) no reasonable juror could find that the '111 and '766 Patents are invalid as obvious based on the alleged combination of the Theobald and Shiga references.

First, pursuant to 35 U.S.C. § 315(e)(2), a party who files a petition for *inter partes* review ("IPR") with the U.S. Patent and Trademark Office Patent Trial and Appeals Board ("PTAB") that results in a final written decision ("FWD") is estopped from challenging the validity of the same patent in district court based on any ground that the petitioner raised or reasonably could have raised during that IPR. ZTE filed an IPR petition against the '550 Patent that resulted in a FWD upholding the validity of the '550 Patent claims. Furthermore, it is undisputed that the invalidity grounds that ZTE has raised in this case were known to ZTE since before ZTE filed its IPR petition and, therefore, reasonably could have been raised during the IPR. As a result, ZTE is estopped from challenging the validity of the '550 Patent in this case, and partial summary judgment of no invalidity of the asserted claims of the '550 Patent is appropriate.

Second, no reasonable jury can find that the proposed combination of the Theobald and Shiga references renders obvious the asserted claims of the '111 Patent and the '766 Patent. Even if a person of ordinary skill in the art were motivated to combine these references, the

[1] Copies of the patents were attached to Fundamental's Amended Complaint in this action. *See* Dkt. 25-1 ('766 Patent), Dkt. 25-3 ('111 Patent), Dkt. 25-4 ('550 Patent).

resulting combination does not teach or suggest all of the elements of the asserted claims, and the opinions of ZTE's expert that attempt to fill in these missing elements is based solely on impermissible hindsight.

II. UNDISPUTED MATERIAL FACTS

A. ZTE's Contentions in this Action

1. ZTE's Invalidity Contentions

On February 13, 2017, Fundamental filed the complaint in this action alleging that ZTE has infringed, and continues to infringe, numerous patents, including the '550 Patent, '111 Patent, and '766 Patent. Dkt. No. 1. The asserted patents relate to technologies that enable charging of mobile devices over USB, and the accused products are various mobile phones, tablets and charging adapters sold by ZTE in the United States.

On October 23, 2017, ZTE served its invalidity contentions in this action identifying prior art positions against the asserted claims of the '550 Patent, '111 Patent, and '766 Patent. Adickman Decl. Ex. 1. Of significance to this motion, ZTE alleged that the asserted claims of the '550 Patent, '111 Patent, and '766 Patent are invalid in view of, *inter alia*, the following patents: U.S. Patent No. 6,625,738 ("Shiga"), U.S. Patent No. 6,556,564 ("Rogers"), U.S. Patent No. 5,925,942 ("Theobald"), and U.S. Patent No. 7,360,004 ("Dougherty").[2] *Id*. at App. 000008-000009.

2. ZTE's June 2019 Invalidity Expert Report

On June 6, 2019, ZTE served the opening expert report of Dr. Matthew B. Shoemake addressing validity of the '550 Patent, the '111 Patent, and the '766 Patent. Adickman Decl. Ex. 2. With respect to the '550 Patent, Dr. Shoemake opined that the asserted claims of the '550

[2] In its invalidity contentions, ZTE noted "Dougherty refers to either U.S. Patent No. 7,360,004 or 6,668,296 given the closely related nature of the references." Adickman Decl. Ex. 1, App. 000026 at n.6.

Patent are either anticipated by Dougherty or obvious based on Dougherty in combination with Shiga. *Id.* at App. 000316-000334 (¶¶ 213-294). These same invalidity grounds raised by Dr. Shoemake with respect to the '550 Patent were also disclosed in ZTE's October 23, 2017 invalidity contentions. *See id.*; Adickman Decl. Ex. 1 at App. 000008-000009, 000026-000034.

With respect to the '111 and '766 Patents, the Shoemake Opening Report opined that the asserted claims are obvious in view of Theobald in combination with Shiga. *See* Adickman Decl. Ex. 2 at App. 000304-000340 (¶¶ 147-159) ('111 Patent), App. 000338-000334 (¶¶ 315-338) ('766 Patent).

B. ZTE's IPR Petitions

1. <u>ZTE's IPR2018-00111 Resulted In A Final Written Decision on the '550 Patent</u>

On October 26, 2017, ZTE filed IPR Petition No. 2018-00111 against claims 1–18 of the '550 Patent, raising as grounds obviousness based on the Rogers reference alone and on the combination of the Rogers and Shiga references. Adickman Decl. Ex. 3 ("00111 IPR Petition"). The 00111 IPR Petition did not raise any grounds based on Dougherty, alone or in combination. *Id.* However, ZTE was indisputably aware of Dougherty when it filed the 00111 IPR Petition, at least because it had identified Dougherty in its invalidity contentions three days earlier. On May 9, 2018, the PTAB instituted a review of all challenged claims on all challenged grounds for the 00111 IPR Petition. Adickman Decl. Ex. 4.

On May 3, 2019, the PTAB pursuant to 35 U.S.C. § 318(a) issued its FWD in the 00111 IPR Petition, concluding that "Petitioner has not demonstrated by a preponderance of the evidence that challenged claims 1-3, 9-12, and 18 would have been obvious over Rogers, or that claims 4-8 and 13-17 would have been obvious over Rogers and Shiga." Adickman Decl. Ex. 5 at App. 000506.

2. ZTE's IPR2018-00110 Petition on the '550 Patent Was Denied Institution

On the same day that it filed the 00111 Petition, ZTE also filed a second IPR petition, IPR2018-00110, for the '550 Patent raising as grounds anticipation based on the Dougherty reference and obviousness based on the combination of the Dougherty and Shiga references. Adickman Decl. Ex. 6 ("00110 IPR Petition"). On May 8, 2018, the PTAB denied ZTE's 00110 IPR Petition, declining to institute an IPR on substantive grounds because "Petitioner has not shown that Dougherty discloses '[a]n adapter comprising . . . a USB communication path.'" Adickman Decl. Ex. 7 at App. 000586 & 000589.

III. LEGAL STANDARD

A. Summary Judgment

Rule 56 requires a court to grant summary judgment where the pleadings, affidavits and other summary judgment evidence show "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." *See* Fed. R. Civ. P. 56(a); *Celotex Corp. v. Catrett*, 477 U.S. 317, 325 (1986). A dispute of material fact is genuine if a reasonable jury viewing the evidence can reach a verdict in favor of the non-movant. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). As the movant, Fundamental has the initial burden of showing the absence of evidence to support the non-movant's claims. *Celotex*, 477 U.S. at 325. The burden shifts to the non-movant once Fundamental satisfies its initial burden. *Fields v. City of S. Houston*, 922 F.2d 1183, 1187 (5th Cir. 1991).

B. IPR Estoppel Under 35 U.S.C. § 315(e)(2)

Section 315(e)(2) plainly sets forth the scope of IPR estoppel in a civil action:

> The petitioner in an *inter partes* review of a claim in a patent under this chapter that results in a final written decision under section 318(a) . . . may not assert either in a civil action . . . that the claim is invalid on any ground that the

> petitioner raised or ***reasonably could have raised during that*** **inter partes** ***review***.

35 U.S.C. § 315(e)(2) (emphasis added). As one court recently noted in determining the scope of estoppel under this statute, "the Supreme Court has stated that an *inter partes* review begins when the petitioner files a petition requesting the PTAB to institute such a review." *Trustees of Columbia Univ. in the City of N.Y. v. Symantec Corp.*, No. 3:13-cv-808, 2019 WL 2814682, at *10 (E.D. Va. Jul. 2, 2019) (citing *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018)). "The Supreme Court has also found that the substance of the petition drives the *inter partes* review proceeding itself." *Id.* (citing *SAS Inst.*, 138 S. Ct. at 1355). Thus, for the purpose of Section 315(e)(2), a petitioner reasonably could have raised a ground "during" an IPR if that ground ***could have been raised in the petition*** for the IPR that results in a FWD. *Id*. The proper starting point for the inquiry is the petition.

C. Invalidity Based On Obviousness

Claims of an issued patent are presumed valid. *Bausch & Lomb, Inc. v. BarnesHind/Hydrocurve, Inc.,* 796 F.2d 443, 446 (Fed. Cir. 1986) (citing 35 U.S.C. § 282). A patent claim is invalid as obvious "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103(a). "Obviousness 'cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.'" *Cheese Sys., Inc. v. Tetra Pak Cheese & Powder Sys., Inc.*, 725 F.3d 1341, 1352 (Fed. Cir. 2013) (quoting *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998)); *see also St. Jude Med., Inc. v. Access Closure, Inc.*, 729 F.3d 1369, 1381 (Fed. Cir. 2013) (affirming denial of JMOL motion and confirming court's conclusion of non-obviousness while cautioning against hindsight

and "ex post reasoning"; citing *KSR Int'l Co. v. Teleflex Inc.,* 550 U.S. 398, 415, 421 (2007)). It is inappropriate to rely on "unsupported and inferential theories" based on conclusory opinions regarding the teaching of the prior art, where there is no evidence supporting these theories from the prior art itself. *Harmonic Inc. v. Avid Tech., Inc*., 815 F.3d 1356, 1363 (Fed. Cir. 2016) ("Harmonic argues that Haskell teaches this claim limitation, but puts forth very little evidence to support this contention. With no express teaching of this limitation in Haskell, Harmonic relies on several unsupported and inferential theories based on what Haskell does teach."). Courts have granted summary judgment where the proposed prior art combination fails to disclose every limitation of the claims. *See, e.g.*, *MediaTek, Inc. v. Freescale Semiconductor, Inc.*, No. 11-CV-5341 YGR, 2014 WL 2854705, at *6–7 (N.D. Cal. June 20, 2014) (granting summary judgment of no obviousness because "neither reference, nor their combination would meet all the limitations" of the claim).

IV. ARGUMENT

A. Fundamental Is Entitled to Summary Judgment of Validity of the Asserted Claims of the '550 Patent Based on IPR Estoppel

It is well accepted that a petitioner in an IPR that results in a FWD is estopped from asserting that a claim is invalid on any ground that he raised or reasonably could have raised during that IPR. ZTE was aware of the Dougherty and Shiga prior art references at the time that it filed the 00111 IPR Petition. Thus, ZTE reasonably could have raised invalidity grounds based on these references in the 00111 IPR Petition and, having failed to do so, is estopped from relying on this art to challenge the validity of the '550 Patent in this case.

1. The Plain Language of Section 315(e)(2) Estops ZTE from Asserting Grounds It "Raised or Reasonably Could Have Raised" During IPR2018-00111

It is undisputed here that ZTE's 00111 IPR Petition resulted in a FWD under Section 318(a). Adickman Decl. Ex. 5. It is also undisputed that the grounds advanced by ZTE's expert for invalidity of the asserted claims of the '550 Patent (based on Dougherty alone and in combination with Shiga) were disclosed in ZTE's invalidity contentions ***prior to*** the filing of the 00111 IPR Petition. *See* Adickman Decl. Exs. 1 & 3. Thus ZTE "reasonably could have raised" these grounds "during" the 00111 IPR by including them in the 00111 IPR Petition. *See Zitovault v. Int'l Bus. Mach. Corp.*, No. 3:16-cv-962, 2018 WL 2971178, at *3-4 (N.D. Tex. Apr. 4, 2018).

This Court has held that an IPR petitioner "reasonably could have raised" a ground for invalidity during an IPR if it identified the prior art in invalidity contentions prior to the filing of the petition. *See, e.g.*, *Zitovault*, 2018 WL 2971178, at *3-4 (order estopping defendants from asserting anticipation or obviousness of claims subject to IPR FWD in light of prior art publications in their invalidity contentions). In *Zitovault*, the defendants filed an IPR petition that was substantially identical to a pending IPR already instituted from a petition filed by Amazon.[3] *Id.* at *1. Notably, the *Zitovault* defendants' IPR petition was filed *after* serving invalidity contentions in the litigation, and the PTAB issued a FWD in that IPR. *Id.* at *4. This Court in *Zitovault* found estoppel based on grounds not included in the petition but previously disclosed in invalidity contentions. It reasoned that "[a]llowing Defendants to raise arguments

[3] In *Zitovault*, claim 4 of the patent at issue was petitioned in the Amazon IPR but not instituted even though other grounds in the same petition were instituted. *Zitovault*, 2018 WL 2971178, at *4. The *Zitovault* court declined to extend estoppel to claim 4. *Id.* The *SAS Institute* decision has since confirmed that partial institution is not permitted by the IPR statute. *SAS Inst.*, 138 S. Ct. at 1359-60.

here that they elected not to raise during the Amazon IPR would give them 'a second bite at the apple and allow it to reap the benefits of the IPR without the downside of meaningful estoppel.'" *Id.* (quoting *Parallel Networks Licensing, LLC v. Int'l Bus. Mach. Corp.*, No. 13–2072, 2017 WL 1045912, at *12 (D. Del. Feb. 22, 2017)).

Other courts have similarly held IPR petitioners to their invalidity contentions in determining the scope of IPR estoppel. *See, e.g., Trustees of Columbia Univ.*, 2019 WL 2814682, at *11-12 (holding Symantec estopped from asserting invalidity based on art identified in invalidity contentions served prior to IPR petition); *Parallel Networks*, 2017 WL 1045912, at *11-12 (granting summary judgment of no obviousness based on estoppel because prior art was known and disclosed in invalidity contentions served before IPR petition); *Network-1 Techs., Inc. v. Alcatel-Lucent USA, Inc.*, No. 6:11-cv-492, 2017 WL 4856473, at *2 (E.D. Tex. Oct. 27, 2017) (noting Section 315(e)(2) "provides that a party is estopped from asserting at trial invalidity grounds that it reasonably could have raised during an IPR, and non-petitioned grounds that could have been included in an IPR petition are precisely those grounds").[4] As the court in *Parallel Networks* noted: "The PTAB has recognized that estoppel under § 315(e) is broad, and that the prior art references (or combinations) a petitioner 'could have raised' includes any references that were known to the petitioner or that could reasonably have been discovered by 'a skilled searcher conducting a diligent search.'" *Parallel Networks*, 2017 WL 1045912, at *11 (citing *Apotex v. Wyeth*, IPR2015–00873, Paper No. 8 at 6 (quoting 157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Grassley)).

[4] *See also Cobalt Boats, LLC v. Sea Ray Boats, Inc.*, No. 2-15-cv-21, 2017 WL 2605977, at *3 (E.D. Va. June 5, 2017); *Biscotti Inc. v. Microsoft Corp.*, No. 2:13-cv-1015, 2017 WL 2526231, at *7 (E.D. Tex. May 11, 2017); *iLife Techs., Inc. v. Nintendo of Am., Inc.*, No. 3:13-cv-4987-M, 2017 U.S. Dist. LEXIS 87769, at *19 (N.D. Tex. May 30, 2017).

Because ZTE could have raised Dougherty and Shiga in the 00111 IPR Petition, Section 315(e)(2) expressly bars ZTE from asserting that claims 3-7 & 12-16 of the '550 Patent are invalid based on Dougherty alone or in combination with Shiga.

2. ZTE's Second IPR Petition Does Not Provide an Exception to the Applicability of Section 315(e)(2)

Fundamental expects that ZTE will likely argue that it attempted to raise the Dougherty and Shiga grounds in the separate 00110 IPR Petition, which was denied institution by the PTAB on substantive grounds. The denial of ZTE's parallel 00110 IPR Petition, however, does not affect the scope of estoppel that arises from the FWD in the 00111 IPR Petition. Although the grounds ZTE now advances in its expert report for the asserted claims of the '550 Patent (Dougherty alone and in combination with Shiga) were the subject of the denied second IPR petition, under the plain language of Section 315(e)(2) as discussed above, ZTE still "reasonably could have raised" them "during" the 00111 IPR by including them in the 00111 IPR Petition.

Indeed, if ZTE had included the Dougherty and Shiga grounds in the 00111 IPR Petition (which it indisputably could have done), those grounds would have been part of the FWD in the 00111 IPR Petition and ZTE could not possibly argue that estoppel does not apply. There is no authority that would support a different outcome simply because ZTE chose to raise the grounds in a second petition, as opposed to including them as additional grounds in the first petition. For the purpose of evaluating estoppel based on the final written decision ***in the 00111 IPR***, the grounds from the 00110 IPR Petition are not "non-instituted grounds" that might provide an exception to estoppel.

ZTE may argue that the Federal Circuit's decision in *Shaw Industries Group, Inc. v. Automated Creel Systems, Inc.*, 817 F.3d 1293 (Fed. Cir. 2016), provides an exception to the statutory language regarding estoppel. It does not. In *Shaw*, the Federal Circuit considered an

appeal from a FWD by the PTAB, where the PTAB had instituted an IPR but declined to institute some of the grounds in the petition because they were redundant of other grounds that were instituted. In the appeal, petitioner also sought a writ of mandamus instructing the U.S. Patent and Trademark Office to reevaluate its decision finding the non-instituted ground redundant. *Id.* at 1299-1300. The Federal Circuit denied the writ application and noted that because "[t]he IPR does not begin until it is instituted," the petitioner "could not have reasonably raised" the non-instituted ground "during the IPR." *Id.* at 1300. Thus, *Shaw* stands for the narrow principle that grounds in a petition that are selectively rejected for institution by the PTAB on procedural grounds are not subject to estoppel.[5] *Id.*; *see also Trustees of Columbia Univ.*, 2019 WL 2814682, at *10-11 (noting unique procedure at issue in *Shaw* and limiting *Shaw*'s impact to the unique circumstances of that case).

Not only is *Shaw* inapplicable to the facts here, its applicability in general has been severely limited by the Supreme Court's subsequent ruling in *SAS Institute*. In *SAS Institute*, the Supreme Court rejected the PTAB's practice of partial institution of grounds in a petition and confirmed that the scope of an IPR is determined by the scope of the IPR petition. *SAS Inst.*, 138 S. Ct. at 1355, 1359-60. The same is true for the scope of estoppel. The scope of potential estoppel for an IPR is determined by what was raised *in that petition* and what could have been raised *in that petition*.[6] *See* 35 U.S.C. § 315(e)(2); *Oil–Dri Corp. of Am. v. Nestle Purina*

[5] At least one court has noted the language in *Shaw* is mere dicta with respect to whether estoppel would apply to non-instituted or non-petitioned grounds. *See, e.g., Cobalt Boats*, 2017 WL 2605977, at *3 (noting that the *Shaw* court "was only making observations in dicta, and it had no occasion to consider restricting estoppel in the manner that other districts have interpreted it" and holding that Section 315(e)(2) applied to non-petitioned grounds).

[6] One court has held that, in light of *SAS Institute*, non-instituted grounds in a partially instituted IPR can form the basis of estoppel. *F'Real Foods, LLC v. Hamilton Beach Brands, Inc.*, No. 16-41-CFC, 2019 WL 1558486, at *2 (D. Del. Apr. 10, 2019) (finding estoppel of grounds PTAB denied institution based on redundancy because defendants did not seek a remand during appeal

Petcare Co., No. 15-cv-1067, 2017 WL 3278915, at *8 (N.D. Ill. Aug. 2, 2017) ("If a party does not include an invalidity ground in its petition that it reasonably could have included, it necessarily has not raised a ground that it 'reasonably could have raised during . . . IPR.'") (quoting 35 U.S.C. § 315(e)(2)); *see also Milwaukee Elec. Tool Corp. v. Snap–On Inc.*, 271 F. Supp. 3d 990, 1029 (E.D. Wis. 2017) (finding estoppel of non-petitioned grounds and distinguishing *Shaw*). Whether or not a ground could have been raised in a separate petition is simply irrelevant.

Here, ZTE chose not to include the grounds based on Dougherty and Shiga ***in the 00111 IPR Petition***. Unlike in *Shaw*, the 00111 IPR Petition was ***instituted in its entirety***, not partially. There are no "non-instituted grounds" raised in the 00111 IPR Petition. *See Trustees of Columbia Univ.*, 2019 WL 2814682, at *11 (noting that *Shaw* did not apply because petitions were "fully instituted"). The mere fact that a separate parallel petition included those non-petitioned grounds and was not instituted does not transform those "non-petitioned" grounds in the 00111 IPR Petition into "non-instituted" grounds under *Shaw*.

3. <u>Finding Estoppel Here Supports the Policy and Purpose of IPR Estoppel</u>

The IPR framework was created "to 'establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counter productive litigation costs.'" *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284, 1290-91 (Fed. Cir. 2015).

Congress intended the IPR framework to be a substitute for litigating patent validity in district court. *See*, *e.g.*, *Patent Reform Act of 2009: Hearing Before the House Comm. on the*

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of the FWD in view of the *SAS Institute* decision). In *F'Real*, the court also declined to find estoppel covering non-petitioned grounds on facts distinguishable from this case—namely, because plaintiff did not meet its burden and defendants successfully offered evidence of their lack of knowledge. *Id.* (noting plaintiff offered no evidence establishing estoppel). Unlike the case at bar, the defendants in *F'Real* did not serve invalidity contentions prior to filing their IPR.

Judiciary, 111th Cong. 153 (2009) (statement of Rep. Manzullo) ("It is clearly appropriate to have an administrative process for challenging patent validity, but it should exist within a structure that guarantees a quick—and final—determination."); *Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. on the Judiciary*, 110th Cong. 13 (2007) (statement of Jon Dudas, Director, USPTO) ("[T]he estoppel needs to be quite strong that says on the second window any issue that you raised or could have raised you can bring up no place else. That second window, from the administration's position, is intended to allow nothing—a complete alternative to litigation."). The PTAB has recognized that "a petitioner makes an affirmative choice to avail itself of *inter partes* review only on certain grounds. That choice, however, comes with consequences, most prominently, that grounds petitioner elects not to raise in its petition for *inter partes* review may be subject to the consequences of Section 315(e)(1)." *Great W. Cas. Co. v. Intellectual Ventures II LLC*, IPR No. 2016–01534, Paper No. 13, at 11–14, 2017 WL 11139840, at *6 (PTAB Feb. 15, 2017). "In order for IPR to fulfill its mission of streamlining patent litigation in the district courts and promoting efficient dispute resolution, a petitioner cannot be left with the option to institute a few grounds for IPR while holding some others in reserve for a second bite at the invalidity apple once in the district court." *Milwaukee Elec.*, 271 F. Supp. 3d at 1029 (finding estoppel of non-petitioned grounds).

Here, although ZTE separately petitioned and failed to get institution on the grounds at issue here, the plain text of Section 315(e)(2) and the policy behind IPR still supports a finding of estoppel. If estoppel were found not to extend to the non-petitioned grounds for the 00111 IPR Petition merely because those grounds were included in a separate parallel petition that was not instituted, petitioners would be encouraged to "carefully craft" their petitions to get two bites at the invalidity apple. *Cf. Trustees of Columbia Univ.*, 2019 WL 2814682, at *11 (quoting

Cobalt Boats, 2017 WL 2605977, at *3, and noting that failing to extend estoppel to non-petitioned grounds would frustrate purpose of Section 315(e)(2)). Petitioners could simply file separate, half-hearted IPR petitions that had little hope of being instituted in order to inoculate certain art from estoppel and preserve for themselves invalidity grounds to use at trial. *See, e.g.*, *Parallel Networks*, 2017 WL 1045912, at *12 ("Allowing IBM to raise arguments here that it elected not to raise during the IPR would give it a second bite at the apple and allow it to reap the benefits of the IPR without the downside of meaningful estoppel.").

Finding estoppel here with respect to the '550 Patent discourages petitioners from filing multiple petitions to maintain prior art positions in litigation and helps carry out the purpose and policy behind the IPR framework.

B. Fundamental Is Entitled to Summary Judgment That the Asserted Claims of the '111 and '766 Patents Are Not Obvious Based on the Proposed Combination of Theobald and Shiga

Separately, with respect to the '111 and '766 Patents, Fundamental respectfully moves for summary judgment that the asserted claims are not invalid as obvious based on a combination of Theobald and Shiga.

ZTE's expert, Dr. Shoemake, has offered opinions that the asserted claims of the '111 and '766 Patents are invalid as obvious based on a combination of Theobald and Shiga. Even assuming (for the purposes of this motion only) that a person of ordinary skill in the art would be motivated to combine these references, the combination fails to disclose all of the elements of the asserted claims.[7] Because a reasonable juror could not find that the asserted claims were obvious based on this alleged combination, partial summary judgment of invalidity is appropriate.

[7] Fundamental's expert, Dr. Ken Fernald, has submitted an expert report in which he provides numerous reasons why a person of ordinary skill in the art would not have been motivated to combine Theobald with Shiga. For purposes of this motion, however, it is not necessary for the Court to consider those disputed issues of fact.

1. Additional Undisputed Facts Material to the Non-Obviousness of the '111 and '766 Patents in View of Theobald and Shiga

(a) The Invention of the '111 and '766 Patents

The '111 and '766 Patents "relate[] to power adapters for use with mobile devices." '111 Patent at 1:26-28.[8] The patents note that "[i]t is desirable . . . to have a combined power and data interface" in a mobile device and proposes the use of a standard USB interface for both charging and data.[9] *Id.* at 1:44-45. According to the patents, however, "[a]lthough the USB interface can be used as a power interface, the USB is typically not used for that purpose by mobile devices." *Id.* at 1:52-53. The patents state that this is because "typical USB power source devices, such as hubs and hosts, require that a USB device participate in a host-initiated process called enumeration in order to be compliant with the current USB specification in drawing power from the USB interface." *Id.* at 1:55-59. The patents disclose that "it would be preferable in many situations, such as when a host would not be available, . . . to be able to utilize alternate power sources such as conventional AC outlets and DC car sockets that are not capable of participating in enumeration to supply power to the mobile device via a USB interface." *Id.* at 1:59-67. The patents explain that in addition to the enumeration requirement, the USB specification also "limits the electrical current that can flow across the USB," and, by extension, the rate at which a battery can be charged. *Id.* at 8:13-16.

In order to overcome the stated problems in the art, the '111 and '766 Patents teach a novel adapter configured to provide power to a mobile device through a USB connection without first undergoing USB enumeration, and a novel mobile device that can detect such an adapter

[8] The '111 Patent and the '766 Patent share a common specification. For convenience, citations herein are made to the '111 Patent; however, identical disclosures appear in the '766 Patent.

[9] Although the claims are directed to adapters and mobile devices with USB connectors and interfaces, the specification notes that the disclosed invention "could be applicable to devices and systems that use other standard interfaces." '111 Patent at 11:54-58.

and draw power without enumeration and in excess of the limits set in the USB specification. *See generally* '111 Patent, '766 Patent. In particular, the '111 and '766 Patents disclose a USB adapter that includes an "identification subsystem" for enabling the above functionality. *E.g.*, '111 Patent at 6:55-60. The identification subsystem of the patents "provides an identification signal to the mobile device 10 that the power source is not a USB limited source." *Id.* at 8:23-25. As explained in the patents, when connected to a mobile device, "the identification subsystem 108 of the USB adapter 100 preferably provides an identification signal to the mobile device 10 to notify the mobile device 10 that the device 10 is connected to a power source that is not subject to the power limits imposed by the USB specification." *Id.* at 9:3-8. The corresponding mobile device of the patents "is programmed to recognize the identification signal," and subsequently "draws power through the USB adapter 100 without waiting for enumeration." *Id.*at 9:12-14.

(b) Dr. Shoemake's Opinions Regarding the Proposed Combination of Theobald and Shiga

The Shoemake Opening Report opines that the asserted claims of the '111 and '766 Patents are obvious based on a combination of Theobald and Shiga. *See* Adickman Decl. Ex. 2 at App. 000304-000307 (¶¶ 147-159) ('111), App. 000388-000344 (¶¶ 315-338) ('766). Theobald is directed to "a low cost apparatus and method of identifying an accessory to a device that maintains backward compatibility with existing accessories that use the accessory connector." Adickman Decl. Ex. 11 at App. 001078 (1:54-57). Dr. Shoemake relies on embodiments in Theobald that include an "eight pin J3-type accessory connector" used in Motorola MicroTAC™ cellular telephones. *Id.* at App. 001078 (1:24-27); *id.* at App. 001079 (3:21-27). In the preferred embodiment, Theobald's charging accessory uses a resistor to identify itself, via an analog audio line, as either a "mid rate" charger (capable of supplying 350

mA current) or a "fast rate" charger (capable of supplying 850 mA current). *Id.* at App. 001079 (4:41-55). Theobald emphasizes that data communication should adhere to connection protocols. *Id.* at App. 001080 (6:4-13) ("[D]ata is communicated between the accessory circuitry 170 and the controller 108 via the path of data line 190-pin 181-pin 127-data line 134, the path of data line 191-pin 182-pin 128-data line 135, and the path of data line 192-pin 184-pin 129-data line 136 **according to the three-wire bus protocol** utilized in radiotelephone products manufactured and sold by Motorola, Inc. or **other suitable high speed data communication protocol**; and the logic grounds are intercoupled via lines 193 and 137 and pins 186 and 131." (emphases added)). Theobald does not disclose any embodiment that uses USB; in fact, Theobald does not even mention USB. *See* Adickman Decl. Ex. 8 (Aug. 14, 2019 Shoemake Dep. Tr.) at App. 000643, ll. 22-25 ("Q. Okay. And Theobald itself, the reference, it doesn't make any mention -- it doesn't refer to USB at all, correct? A. Not to the best of my recollection."). *See also* Adickman Decl. Ex. 9 (Fernald Rebuttal Report) at App. 000899-000900 (¶¶ 159-162) (discussing Theobald).

Shiga discloses a USB keyboard that can wake a host computer up from an "off state," where the primary power supply of the computer is turned off.[10] Adickman Decl. Ex. 12 at App. 001087 (1:11-19, 2:18-30). When certain buttons on the keyboard are pressed, the keyboard sends a "fourth mode" high level "H" signal on the D+ and D- lines (also called an "SE1 signal"), causing the main power supply of the computer to turn on. *Id.* at App. 001088 (3:40-55). Shiga does not discuss mobile devices or battery charging at all, and Shiga's "fourth mode" signal is not used to select a power source or to control charging of a battery. *See* Adickman Decl. Ex. 8 (Aug. 14, 2019 Shoemake Dep. Tr.) at App. 000693-000694 (103:19-104:10), App.

[10] The keyboard receives power from a supplemental power supply inside the computer when the main power supply is off. Adickman Decl. Ex. 12 at App. 001087 (2:31-42).

000707 (117:4-10), App. 000779 (189:14-23). *See also* Adickman Decl. Ex. 9 (Fernald Rebuttal Report) at App. 000913-000916 (¶¶ 192-199) (discussing Shiga).

Dr. Shoemake proposes combining Theobald and Shiga by (1) replacing Theobald's J3 connector with a USB connector;[11] (2) configuring Theobald to implement the USB protocol;[12] (3) configuring Theobald to detect Shiga's "fourth mode" signal;[13] and (4) configuring Theobald to respond to Shiga's "fourth mode" or "SE1" signal by determining that the connected power source is not a USB host or hub and drawing current in excess of USB 2.0 limits.[14] *See also generally* Adickman Decl. Ex. 2 at App. 000299-000310 (¶¶ 126-182), App. 000337-000354 (¶¶ 313-399).

Dr. Shoemake does not, however, identify any disclosure in Theobald ***or*** Shiga that teaches the use of signaling to distinguish between a USB host or hub and an alternate power source, or to enable charging in excess of USB 2.0 specification limits, as required by the claims of the '111 and '766 Patents. Indeed, Dr. Shoemake admits that "Theobald does not specifically disclose an identification signal that indicates to the mobile device that the power socket is not a USB host or hub." *Id.* at App. 000304-000305 (¶ 149). Dr. Shoemake relies on Shiga to supply the missing limitation, *see id.*, but does not identify any disclosure in Shiga that uses signaling to identify a power source that is not a USB host or hub or to enable battery charging in excess of USB 2.0 limits. *See* Adickman Decl. Ex. 8 (Aug. 14, 2019 Shoemake Dep. Tr.) at App. 000727-000728 (137:3-138:25) (admitting Shiga's "fourth-mode signals" do not identify a power source type), App. 000693-000694 (103:19-104:10) (admitting that Shiga does not disclose charging a

[11] *See, e.g.*, Adickman Decl. Ex. 2 at App. 000302 (¶ 139), App. 000338 (¶ 315).

[12] *Id.* at App. 000305 (¶ 150), App. 000338-339 (¶ 319).

[13] *Id.* at App. 000304-000305 (¶¶ 149-150), App. 000338-339 (¶ 319).

[14] *Id.* at App. 000304 (¶ 149), App. 000338-339 (¶ 319).

battery or identifying different types of power sources), App. 000688 (98:10-25) (admitting that Shiga does not discuss mobile devices or battery charging). Rather, Dr. Shoemake simply concludes, without any support, that it would have been obvious to use Shiga's "fourth-mode signals"—which Shiga uses to wake up a host computer whose primary power supply is turned off—for the completely different function of identifying a non-USB host or hub power source. *See, e.g.*, Adickman Decl. Ex. 2 at App. 000304 (¶ 149) ("[I]t would have been obvious to modify Theobald's identification system to use Shiga's USB protocol with 'fourth mode' signals in order to simply and efficiently identify the attached accessory."), App. 000343 (¶ 335) ("In the Theobald/Shiga combination, the accessory 104 identifies itself to the electronic device 102 by sending Shiga's fourth-mode signals from the accessory circuitry 170 to the controller 108 over the D+ and D- lines.").

(c) The PTAB's Decision Regarding the Combination of Theobald and Shiga in IPR2018-00215

On January 12, 2018, ZTE filed IPR Petition No. 2018-00215 against claims 1-24 of the '766 Patent, raising as grounds obviousness based on the combination of the Theobald and Shiga references. Adickman Decl. Ex. 14 ("00215 IPR Petition"). On July 25, 2018, the PTAB denied ZTE's 00215 IPR Petition in its entirety. Adickman Decl. Ex. 10.

In denying institution, the PTAB agreed with Fundamental that "the Petition does not address a 'fundamental issue'—why a person having ordinary skill in the art would have replaced Theobald's J3 connector with a USB connector but still left the modified device to receive the same supply voltage (8.6 V) and draw the same current (850 mA) provided by the fast-rate charger disclosed in Theobald, in violation of the applicable USB limits." *Id.* at App. 001072. The PTAB further explained, "nothing in Theobald suggests using a different connector, such as USB, with the specific fast-rate charger described in Theobald if doing so

would result in the mobile device drawing power or current in excess of the limits set forth in the specification for that connector" and "Petitioner does contend that Shiga suggests using USB in a way that violates any USB Specification limits." *Id.* For these reasons, the PTAB determined that "the Petition fails to articulate sufficient reasoning with rational underpinning for combining the teachings of the references in the manner asserted in the Petition." *Id.*

2. ZTE Cannot Establish a Genuine Dispute of Fact Regarding Obviousness

The asserted claims of the '111 Patent require "an identification subsystem configured to generate an identification signal, ***wherein the identification signal is configured to indicate to the mobile device that the power socket is not a USB host or hub***." The asserted claims of the '766 Patent require a USB communication path and a "charging subsystem ***enabled to draw current unrestricted by at least one predetermined USB Specification limit***, said enablement being responsive to an abnormal USB data condition detected at said USB communication path." Yet Dr. Shoemake does not identify any disclosure in Theobald ***or*** Shiga that teaches these limitations, nor does he identify any record facts that even suggest modifying Theobald or Shiga to incorporate these limitations. Dr. Shoemake's conclusory opinions are based on pure hindsight and cannot establish a genuine dispute to preclude summary judgment. *See Cheese Sys.*, 725 F.3d at 1352.

As an initial matter, there is no dispute that neither Theobald nor Shiga teach the claimed identification signal that indicates to a mobile device that a power socket is not a USB host or hub, or the claimed abnormal USB data condition that enables a mobile device to draw current unrestricted by the limits of the USB specification. Dr. Shoemake admits in his expert report that Theobald does not disclose these limitations. Adickman Decl. Ex. 2 at App. 000304 (¶ 149) ("Theobald does not specifically disclose an identification signal that indicates to the mobile

device that the power socket is not a USB host or hub."), App. 000343 (¶ 336) (relying on "Shiga's fourth-mode signals" as the '766 Patent's claimed "abnormal USB data condition"). And while Dr. Shoemake asserts in his report that Shiga's "fourth-mode signals" disclose these limitations (*see, e.g.*, *id.* at App. 000304 (¶ 149)), Shiga teaches that the "fourth-mode signals" are used for an entirely different function—*i.e.*, waking up a host computer from a powered off state. Adickman Decl. Ex. 12 at App. 001087 (1:11-19, 2:18-30), App. 001088 (3:40-55), App. 001089-001090 (6:35-7:15). Indeed, Dr. Shoemake admitted at his deposition that Shiga does ***not*** use its "fourth-mode signal" in a manner consistent with the "identification signal" or "abnormal USB data condition" recited in the claims:

> Q. In Shiga, the fourth mode signal is not identifying a power source type?
>
> A. ***In Shiga, outside of the combination, the use of the fourth mode signals do not indicate or identify a power source type, that's true.***
>
> Q. Okay. So ***within Shiga, the fourth mode signal is not used as an identification signal as that term is construed in this case or for the '111 patent?***
>
> A. So it's used in Shiga as something that identifies something, that identifies something, and that's how I'm using it in this combination***. But you're correct that in Shiga, stand alone, the fourth mode signal does not identify a power source. It identifies someone has pressed the button on the keyboard.***
>
> Q. ***And so your combination is to take the fourth mode signal from Shiga where it identifies someone has pressed a button on the keyboard and use it in Theobald to instead identify a power source type?***
>
> ***A. I think the answer to that question is yes.*** You can see at the top of Page 38 in my report, I say in the combination Theobald's accessory 104 would identify itself to the electronic device 102 by sending Shiga's fourth mode signals from the accessory circuit 170 to the controller 108 over the D+ and D- lines of the USB connector.

Adickman Decl. Ex. 8 at App. 000727-000728 (137:19-138:25); *see also id.* at App. 000693-000694 (103:19-104:10) (admitting that Shiga does not disclose charging a battery or identifying

different types of power sources), App. 000688 (98:10-25) (admitting that Shiga does not discuss mobile devices or battery charging).

Because the combination of Theobald and Shiga does not literally disclose every limitation of the asserted claims of the '111 Patent and the '766 Patent, ZTE cannot establish obviousness absent record evidence providing "some reason why one of skill in the art would modify the prior art to obtain the claimed invention." *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1335 (Fed. Cir. 2016), *overruled on other grounds*, *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017). Yet Dr. Shoemake fails to provide ***any*** basis for why a person of ordinary skill in the art would make the numerous modifications he proposes to Theobald and Shiga—which go far beyond anything suggested in the references themselves.

The gap in Dr. Shoemake's logic is in fact the ***very reason*** why the PTAB declined to institute an *inter partes* review on the '766 claims based on the combination of Theobald and Shiga in the 00215 IPR Petition. Adickman Decl. Ex. 10. The Board found that even under the more lenient "reasonable likelihood" standard, ZTE had failed to show that any claim would be obvious over Theobald and Shiga. *Id.* at App. 001073. In particular, the Board found that ZTE had failed to address the "critical question" of why a person of ordinary skill in the art would modify Theobald to use a USB connector, but continue to use the disclosed fast rate charger designed for with the J3 connector's electrical specifications. The Board stated:

> Patent Owner argues, among other things, that the Petition fails to articulate sufficiently why a person of ordinary skill in the art would have modified Theobald's system in this manner. Prelim. Resp. 22–26. ***Specifically, Patent Owner contends that the Petition does not address a "fundamental issue"—why a person having ordinary skill in the art would have replaced Theobald's J3 connector with a USB connector but still left the modified device to receive the same supply voltage (8.6 V) and draw the same current (850 mA) provided by the fast-rate charger disclosed in Theobald, in violation of the applicable USB limits. Id. at 23–25. We agree with Patent Owner that Petitioner fails to address this critical question.***

> Although Theobald states that its J3 connector may be replaced with any other "suitable" accessory connector with appropriate pins, ***nothing in Theobald suggests using a different connector, such as USB, with the specific fast-rate charger described in Theobald if doing so would result in the mobile device drawing power or current in excess of the limits set forth in the specification for that connector***. *See* Ex. 1005, 3:21–27, 4:44–48. Moreover, ***Petitioner does contend that Shiga suggests using USB in a way that violates any USB Specification limits***. *See* Pet. 40–43 (discussing only Shiga's fourth mode signal in analyzing rationale for combining the references). Nor do we find that Mr. Geier's testimony sheds any light on the issue, as his declaration largely mirrors the text in the Petition and provides little additional factual support for his assertions. *See* Ex. 1009 ¶¶ 64–70.
>
> Thus, we determine that the Petition fails to articulate sufficient reasoning with rational underpinning for combining the teachings of the references in the manner asserted in the Petition.

Id. at App. 001071-001072. Dr. Shoemake's analysis fails to address this very same "critical question."

Indeed, Theobald expressly teaches that communications between the mobile device and a connected accessory should adhere to the communication protocol used in the device. *See* Adickman Decl. Ex. 11 at App. 001080 (6:4-13). Dr. Shoemake does not identify any disclosure in Theobald that suggests deviating from a communication protocol, such as by exceeding the electrical limits specified in that protocol. To the contrary, Dr. Shoemake admitted at his deposition that Theobald does not disclose any such deviation:

> Q. Now, do you know whether the mid-rate charger's 8.6 volts and 340 milliamps supply, do you know, was that within the limits of the J3 standard?
>
> A. So I don't know one way or the other. I haven't gone to look at to see if the J3 specification had such a limit. ***But we can infer that the J3 connector could accept this voltage level and current level.***
>
> Q. Okay. And ***Theobald doesn't say anything about deviating from the J3 specification or standards electrical limits, right?***
>
> A. Well, I don't recall Theobald actually talking about a J3 standard. You're saying J3's -- let's see. It is a standardized connector. We can see that in column 3. But to answer your question, ***I don't recall him discussing deviating from the power specifications for that connector.***

Adickman Decl. Ex. 8 at App. 000651-000652 (61:15-62:12). Thus, even if, as Dr. Shoemake suggests, a person of ordinary skill in the art were motivated to modify Theobald to use the USB protocol instead of the J3 protocol, there is simply no reason why the person of ordinary skill would not also modify Theobald's fast rate and mid rate chargers to comply with the USB specification—including the enumeration requirement and associated voltage and current limits.

Dr. Shoemake provides only two reasons ***not*** to modify Theobald's fast rate and mid rate chargers to make them USB-compliant, neither of which is supported by evidence. Dr. Shoemake contends that "Theobald teaches the benefit of using higher current limits for faster charging" (Adickman Decl. Ex. 2 at App. 000341 (¶ 329)), but does not point to any disclosure in Theobald to support that assertion. Theobald does not state any preference between the fast rate charger and the mid rate charger. And even if higher current limits were necessarily better, there would be no reason for Theobald to have included a mid rate charger, or for a person of ordinary skill in the art to switch to USB, which had lower current limits. Further, even if Theobald disclosed a preference for higher charging currents, Theobald never teaches to supply a current that exceeds what is permitted by the applicable communication protocol—to the contrary, Theobald teaches adherence to the communication protocol used by the device, and Dr. Shoemake never contends otherwise. *See* Adickman Decl. Ex. 11 at App. 001080 (6:4-13). Dr. Shoemake also contends that deviating from the USB 2.0 standard would be necessary to "maintain backward compatibility with past accessories that mate with the accessory connector of the device." Adickman Decl. Ex. 2 at App. 000343 (¶ 333) (quoting Adickman Decl. Ex. 11 (Theobald) at 1:55-57). Theobald's disclosed accessories all use a J3 connector, however—thus, they would inevitably be incompatible with the disclosed mobile device if it is modified to use USB.

Dr. Shoemake's opinions disclose nothing more than a hindsight combination of components selectively culled from the Theobald and Shiga to fit the parameters of the '111 and '766 Patents—which cannot form the basis for obviousness. *Cheese Sys.*, 725 F.3d at 1352; *see also St. Jude Med.*, 729 F.3d at 1381. It is inappropriate to rely on "unsupported and inferential theories" based on conclusory opinions regarding the teaching of the prior art, where there is no evidence supporting these theories from the prior art itself. *Harmonic*, 815 F.3d at 1363. Instead of just replacing the J3 connector of Theobald with a USB connector of Shiga, Dr. Shoemake further modifies both Theobald ***and*** Shiga by choosing to use the "fourth mode" signal of Shiga in a completely different way than disclosed by Shiga, in a manner that violates the current limit restrictions of the USB standard in clear contravention of Theobald's teachings. This requires Dr. Shoemake to make extensive modifications to the circuitry guided by hindsight in view of the patent claims, rather than the disclosures of the prior art references. Dr. Shoemake's unsupported, conclusory statements that a person of ordinary skill in the art would make these modifications—without any factual support in the references themselves or otherwise—belie his assertion that the proposed combination is obvious.

Because these key limitations are missing from the prior art and ZTE's expert provides merely conclusory, hindsight-motivated testimony, summary judgement is appropriate.

V. CONCLUSION

For the foregoing reasons, Fundamental respectfully requests the Court grant partial summary judgment that the '550 Patent is not invalid, and that the '766 and '111 Patents are not invalid as obvious based on Theobald in combination with Shiga.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system on August 29, 2019.

/s/ Jon B. Hyland
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